# Baumann™ 24000F Wafer Body Control Valve

The Baumann unique 24000F wafer style control valve mates with ASME and EN line flange connections and is designed to control a wide range of process liquids, gases and vapors. This very compact package provides the connection integrity of flanged body globe valves while being significantly lighter and easier to install. Special alloy constructions are available and round out the standard S31603 stainless steel offering. The 24000F serves as a general purpose, modulating valve suitable for process line pressures up to 99 barg (1440 psig) and operating temperatures to 537°C (1000°F).

W9762

**24000F Control Valve with Baumann 32 Dual-Stop Actuator**

W9763

**24000F Control Valve with Baumann 32 Actuator and FIELDVUE DVC2000 Digital Valve Controller**

## Features

- Compact and light-weight design reduces installed piping costs.
- Universal valve body construction mates with both ASME and EN flanges (see table 9).
- Multiple trim capacity reductions available to meet changing process requirements with Cv ratings as low as 0.00013.
- Optional extended bonnet for applications ranging from -195 to 537°C (-320 to 1000°F).
- Optional ENVIRO-SEAL™ packing system to meet critical emission control requirements
- Epoxy powder-coated actuator with stainless steel fasteners for corrosion resistance.
- Multi-spring, field-reversible actuator with reduced deadband, permits direct operation from remote signal devices.
- Actuator and yoke can be removed from the valve assembly while maintaining packing integrity.
- Fisher® FIELDVUE™ digital valve controller available for remote calibration and diagnostics in facilities utilizing the PlantWeb™ architecture.

Figure 1. Baumann 24000F Valve Body with Standard Bonnet and NPS 1 Integral Seat

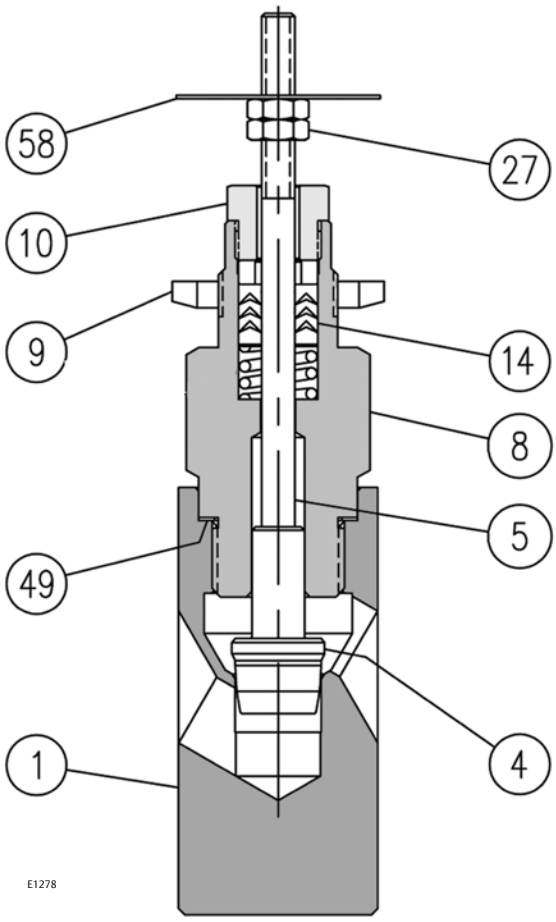
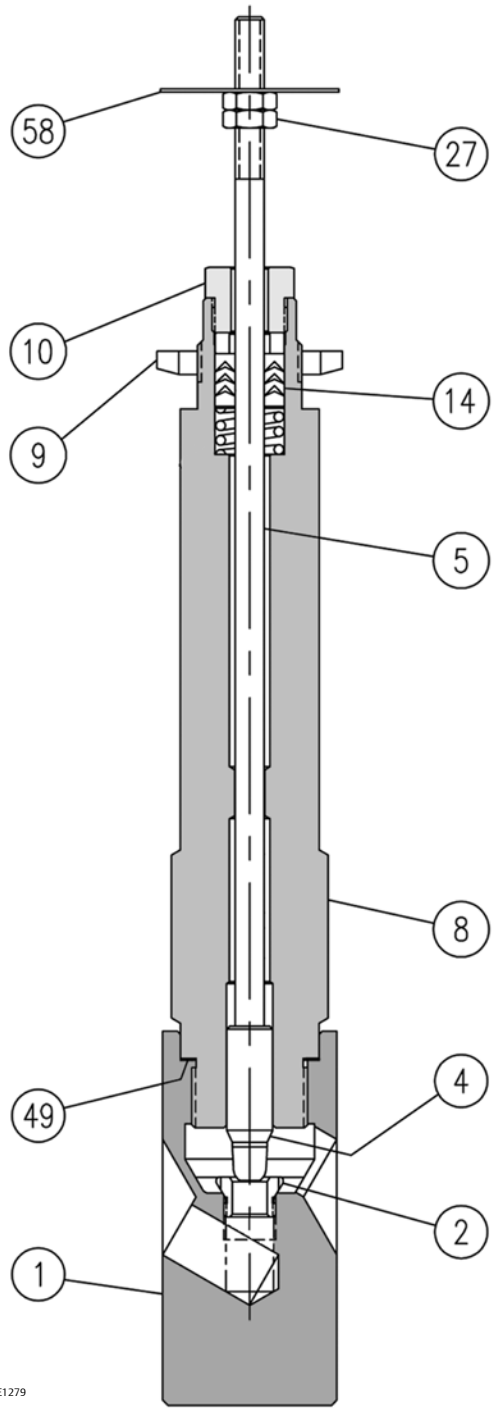



Figure 2. Baumann 24000F Valve Body with Extension Bonnet and Screwed-In Seat Ring

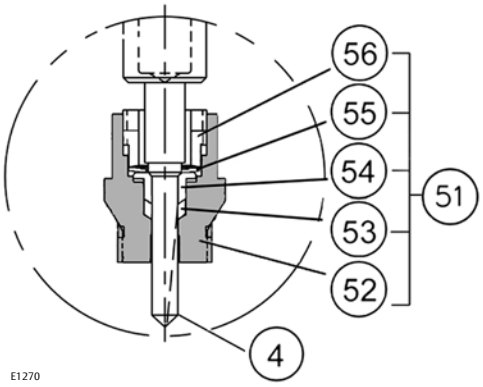


## Table 1. Materials of Construction

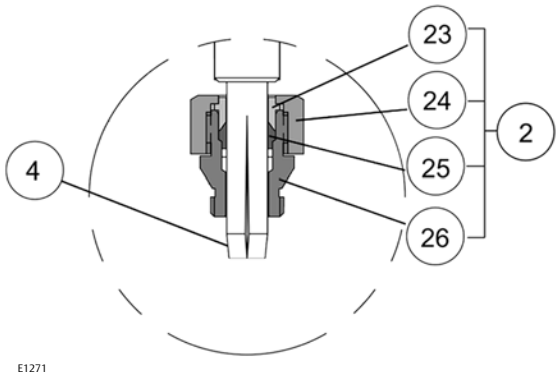
| Key No. | Description | Material | | | |
|---|---|---|---|---|---|
| | | S31603 Stainless Steel | N10276 Nickel Alloy(1) | N08020 Nickel Alloy(1) | N04400 Nickel Alloy(1) |
| 1 | Valve Body | ASME SA479 S31600/ S31603 Dual Certified | ASME SB574 N10276 | ASTM B473 N08020 | ASME SB164 N04400 |
| 2 | Seat Ring (standard) (For Low Flow Trim, see tables 2 and 3) | ASTM A276 S31600/ S31603 Dual Certified | ASME SB574 N10276 | ASTM B473 N08020 | ASME SB164 N04400 |
| 4 | Plug (Metal Seat) Cv ≤ 2.5 | ASME SA479 S21800 (standard) / ASTM A582 S41600 Condition T (optional) | ASME SB574 N10276 | ASTM B473 N08020 | ASME SB164 N04400 |
| | Plug (Metal Seat) Cv ≥ 4.0 | ASTM A276 S31600/ S31603(standard) / ASTM A582 S41600 Condition T (optional) | | | |
| | Plug (Soft Seat) | ASTM A276 S31600/ S31603 with PTFE (Polytetrafluoroethylene) insert | ASME SB574 N10276/PTFE | ASTM B473 N08020/PTFE | ASME SB164 N04400/ PTFE |
| 5 | Stem | ASTM A276 S31600 | ASME SB574 N10276 | ASTM B473 N08020 | ASME SB164 N04400 |
| 8 | Bonnet | ASME SA479 S31600/ S31603 Dual Certified | ASME SB574 N10276 | ASTM B473 N08020 | ASME SB164 N04400 |
| 9 | Drive Nut (Yoke) | S30400 | | | |
| 10 | Packing Follower | ASTM A276 S31600/ S31603 Dual Certified | ASME SB574 N10276 | ASTM B473 N08020 | ASME SB164 N04400 |
| 14 | V- Ring Packing (standard) | (Refer to page 4) | | | |
| | Packing (optional) | (Refer to page 4) | | | |
| 27 | Lock Nut | Stainless Steel (18-8 Stainless Steel) | | | |
| 49 | Body Gasket | Graphite Grade GHR with S31600 Insert | | | |
| 58 | Travel Indicator | ASME SA240 S30400 | | | |

1. For optional valve and trim materials, consult your Emerson Process Management sales office for price and delivery. N08020 and N04400 nickel alloy materials have pressure-temperature ratings less than 206 barg (3000 psig) or 413 barg (6000 psig) respectively.

## Figure 3. Optional 151 Low Flow Trim Assembly




## Figure 4. Optional 177 Low Flow Trim Assembly




## Table 2. 151 Low Flow Trim

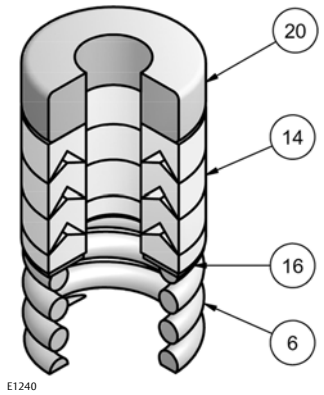
| Key Number | Description | | Material |
|---|---|---|---|
| 4 | Plug | | ASME SA479 S21800 |
| 51 | Seat Sub-Assembly | | |
| | 52 | Cage | ASTM A276 S31600/ S31603 |
| | 53 | Seat | PTFE |
| | 54 | Collar | ASTM A276 S31600/ S31603 |
| | 55 | Washer | ASTM A276 S31600 Cond B |
| | 56 | Insert | ASTM A276 S31600/ S31603 |

## Table 3. 177 Low Flow Trim

| Key Number | | Description | Material |
|---|---|---|---|
| 2(1) | Seat Sub-Assembly | | |
| | 23 | Gland | ASTM A276 S31600/ S31603 |
| | 24 | Retainer Nut | ASTM A276 S31600/ S31603 |
| | 25 | Insert | Reinforced PTFE |
| | 26 | Housing | ASTM A276 S31600/ S31603 |
| 4(1) | | Plug | ASME SA479 S21800 |

1. For optional trim materials, consult your Emerson Process Management sales office for price and delivery. Baumann 32 actuator requires dual-stops with 177 trim series.

### Figure 5. Standard Spring-Loaded PTFE V-Ring Packing Kit

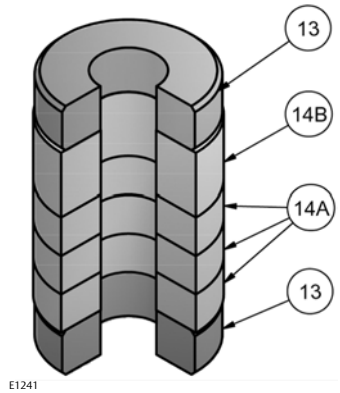



### Table 4. Standard Spring-Loaded PTFE V-Ring Packing Kit

| Key Number | Description | Material |
|---|---|---|
| 6(1) | Spring | ASTM A313 S30200 |
| 14 | Packing Set | PTFE (Polytetrafluoroethylene) / PTFE, 25% carbon filled |
| 16 | Washer | ASME SA240 S31600 |
| 20 | Spacer | J-2000 (filled-Polytetrafluoroethylene) |

1. N10276 nickel alloy valve body construction is furnished with N10276 nickel alloy spring.

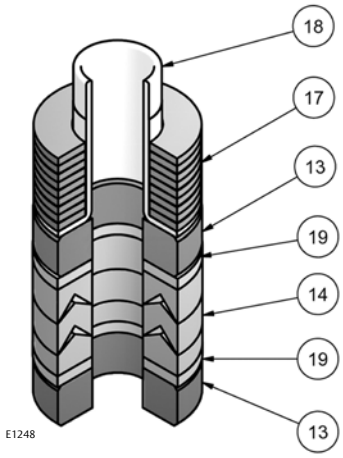
### Figure 6. Molded Graphite (Flexible Graphite) Packing Kit (Optional)




### Table 5. Molded Graphite (Flexible Graphite) Packing Kit (Optional)

| Key Number | Description | Material |
|---|---|---|
| 13 | Bushings | Carbon-Graphite |
| 14A | Packing Rings | Graphite |
| 14B | Packing Ring | Graphite |

### Figure 7. ENVIRO-SEAL Packing Kit (Optional)




### Table 6. ENVIRO-SEAL Packing Kit (Optional)

| Key Number | Description | Material |
|---|---|---|
| 13 | Bushings | Carbon-Graphite |
| 14 | Packing Rings | PTFE (Polytetrafluoroethylene) / PTFE, 25% carbon filled |
| 17 | Belleville Spring | N06600 Nickel Alloy (ASTM B637 N07718, 40 HRC max) |
| 18 | Bushing | PEEK (polyetheretherketone) |
| 19 | Washers | Modified PTFE |

# Special ENVIRO-SEAL Packing Note

The ENVIRO-SEAL PTFE packing system is suitable for 100 ppm environmental applications on services up to 51.7 barg (750 psig) and process temperatures ranging from -46 to 232°C (-50 to 450°F).

For non-environmental applications, this packing system offers excellent performance at the same temperature range up to the maximum valve working pressure.

Temperature limits apply to packing arrangements only. Complete valve assembly temperature limits may differ, refer to appropriate pressure/temperature ratings.

(Reference Fisher Packing Selection Guidelines for Sliding-Stem Valves, Bulletin 59.1:062, D101986X012).

## Table 7. Technical Specifications

| | | |
|---|---|---|
| **NOMINAL PIPE SIZE** | DN 15, 20, and 25 | NPS 1/2, 3/4, and 1 |
| **END CONNECTIONS** | Refer to table 9 | |
| **PRESSURE RATING** | Refer to tables 13, 14, 15, and 16 | |
| **CHARACTERISTIC** | Equal Percentage or Linear | |

## Table 8. Temperature Ratings for Packing and Seat Material(1)

| | | | |
|---|---|---|---|
| **SEATING MATERIAL** | **PTFE Soft Seat** | 151 Trim | -29 to 177°C (-20 to 350°F) |
| | | 577 & 677 Trim | -73 to 232°C (-100 to 450°F) |
| | **Reinforced PTFE** | 177 Trim | -73 to 232°C (-100 to 450°F) |
| | **Metal Seat** | 102, 548, 588, 648, 688 Trim | -195 to 537°C (-320 to 1000°F) |
| **PACKING AND BONNET COMBINATIONS** | **BONNET STYLE** | **PACKING** | **TEMPERATURE LIMIT** |
| | **Standard Bonnet** | Spring Loaded PTFE | -73 to 232°C (-100 to 450°F) |
| | | ENVIRO-SEAL | -45 to 232°C (-50 to 450°F) |
| | | Graphite | -73 to 232°C (-100 to 450°F) |
| | **Extension Bonnet** | Spring Loaded PTFE | -195 to 232°C (-320 to 450°F) |
| | | ENVIRO-SEAL | -45 to 232°C (-50 to 450°F) |
| | | Graphite | -195 to 537°C (-320 to 1000°F) |

1. Temperature limits apply to seating or packing arrangements only. Complete valve assembly temperature limits may differ, refer to appropriate pressure/temperature ratings. For more information on packing selection, reference Fisher Packing Selection Guidelines for Sliding- Stem Valves, Bulletin 59.1:062, D101986X012.

## Table 9. Connections Available

| | **VALVE SIZE** | | **MATING LINE FLANGES** | | | |
|---|---|---|---|---|---|---|
| | **DN** | **NPS** | **CL150** | **CL300** | **CL600** | **PN10-40** |
| **CONNECTIONS** | 15 | 1/2 | NO | Yes | Yes | Yes |
| | 20 | 3/4 | Yes | Yes | Yes | Yes |
| | 25 | 1 | Yes | Yes | Yes | Yes |

## Table 10. Actuator Specifications

| | |
|---|---|
| **TYPE** | 32, 54, 70 Multi-Spring Diaphragm (Single Acting) |
| **DIAPHRAGM AREA** | 210, 350, 450 $cm^2$ / 32, 54, 70 $in^2$ |
| **AIR FAILURE** | 32 and 54 Fails Open or Closed (Field Reversible) / 70 Fails Closed ONLY |
| **TRAVEL(1)** | 12.7 mm / 0.50 inches |
| **AMBIENT TEMPERATURE RANGE** | -29°C to 71°C / -20°F to 160°F |
| **MAXIMUM AIR PRESSURE** | 2.4 barg / 35 psig |
| **DIAPHRAGM MATERIAL(2)** | NBR (Nitrile) / TPES (Polyester Thermoplastic) |
| **SPRING CASES** | Steel, Powder Epoxy-Coated with Stainless Steel Fasteners |
| **YOKE** | Ductile Iron, Powder Epoxy-Coated |

1. Dual travel stops are available on Baumann 32 and 54 actuators. These are not field reversible.
2. Optional reinforced VMQ (Silicone) diaphragm with FKM (Fluorocarbon) O-ring actuator stem seal for high temperature conditions (-29°C to 121°C / -20°F to 250°F) is available with Baumann 32 and 54 actuators ONLY.

## Table 11. Cv Values at 100% Plug Opening (Kv = 0.86 x Cv)

| VALVE SIZE | | ORIFICE DIAMETER | | PLUG TRAVEL | | PLUG SERIES | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 102 | 151 | 177 | 577 | 548 / 588 | 677 | 648 / 688 |
| DN | NPS | mm | inch | mm | inch | Cv | Cv | Cv | Cv | Cv | Cv | Cv |
| 15<br>20<br>25 | 1/2<br>3/4<br>1 | 3.97 | 0.156 | 12.7 | 0.50 | --- | 0.00013<br>0.00025<br>0.0005<br>0.001<br>0.002<br>0.004<br>0.008<br>0.015<br>0.03<br>0.06<br>0.10<br>0.20<br>0.45 | --- | --- | --- | --- | --- |
| | | 6.3 | 0.25 | 12.7 | 0.50 | 0.02<br>0.05<br>0.10<br>0.20 | --- | --- | --- | 0.2<br>0.5<br>1.0 | --- | 0.5<br>1.0 |
| | | 7.9 | 0.3125 | 12.7 | 0.50 | --- | --- | 0.0005<br>0.001,<br>0.002<br>0.005,<br>0.01<br>0.02,<br>0.05 | --- | --- | --- | --- |
| 15<br>20 | 1/2<br>3/4 | 9.5 | 0.375 | 12.7 | 0.50 | --- | --- | --- | 1.0, 1.5<br>2.0 | 1.5 2.0 | 0.1, 0.2,<br>0.5, 1.0,<br>2.0 | 1.5<br>2.0 |
| 25 | 1 | 9.5 | 0.375 | 12.7 | 0.50 | --- | --- | --- | 1.0, 1.5<br>2.5 | 2.5 | 0.1, 0.2,<br>0.5, 1.0,<br>2.5 | 1.5<br>2.5 |
| 25(1) | 1 | 20.6 | 0.8125 | 12.7 | 0.50 | --- | --- | --- | 4.0, 6.5 | 4.0, 6.5 | 4.0 | 4.0, 6.5 |

1. 24000F NPS 1, Cv 4.0 and 6.5 are integral seat.

## Figure 8. Baumann 24000F Trims

**102 Linear Low Flow Trim**

W9747

**151 Modified Equal % Low Flow Trim**

W9751

**177 Modified Equal % Low Flow Trim**

W9748

**548 / 577 / 588 Equal % Trim**

W9749

**648 / 677 / 688 Linear Trim**

W9750

## Table 12. ISA Sizing Coefficients

| Series | Cv Rating | FL | Fd | XT | KC |
|---|---|---|---|---|---|
| 102 | 0.02<br>0.04<br>0.09<br>0.17 | 0.95 | 0.06<br>0.09<br>0.013<br>0.18 | 0.76 | 0.86 |
| 151 | 0.0001<br>0.0002<br>0.0004<br>0.0009<br>0.0017<br>0.003<br>0.007<br>0.013<br>0.026<br>0.052<br>0.09<br>0.17<br>0.39 | 0.98 | 0.35<br>0.04<br>0.05<br>0.06<br>0.075<br>0.10<br>0.11<br>0.15<br>0.18<br>0.22<br>0.25<br>0.30<br>0.40 | 0.81 | 0.94 |
| 177 | 0.0005<br>0.001<br>0.002<br>0.005<br>0.01<br>0.02<br>0.05 | 0.95 | 0.70 | 0.76 | 0.76 |
| 548/588 | 0.2<br>0.5<br>1<br>1.5<br>2<br>2.5<br>4<br>6.5 | 0.90 | 0.28 | 0.68 | 0.94 |
| | | 0.90 | 0.40<br>0.33<br>0.42 | 0.68 | |
| | | | 0.46 | | |
| 577 | 1<br>1.5<br>2<br>4<br>6.5 | 0.90 | 0.40<br>0.33<br>0.42 | 0.68 | 0.73 |
| | | | 0.46 | | |
| 677 | 0.1<br>0.2<br>0.5<br>1<br>2<br>2.5<br>4 | 0.90 | 0.08<br>0.12<br>0.19<br>0.27 | 0.68 | 0.73 |
| | | | 0.46 | | |
| 648/688 | 0.5<br>1<br>1.5<br>2<br>2.5<br>4<br>6.5 | 0.90 | 0.40<br>0.33<br>0.42 | 0.68 | 0.73 |
| | | | 0.46 | | |

### Table 13. Pressure-Temperature Ratings for S31603 Stainless Steel Valve Body (Standard)

| Temperature (°C)[1] | Working Pressure (barg) | Temperature (°F)[1] | Working Pressure (psig) |
|---|---|---|---|
| -195 to 37 | 99 | -320 to 100 | 1440 |
| 93 | 85 | 200 | 1240 |
| 149 | 77 | 300 | 1120 |
| 204 | 70 | 400 | 1025 |
| 232 | 68 | 450 | 990 |
| 260 | 65 | 500 | 955 |
| 288 | 63 | 550 | 927 |
| 315 | 62 | 600 | 900 |
| 343 | 61 | 650 | 890 |
| 371 | 60 | 700 | 870 |
| 398 | 58 | 750 | 855 |
| 426 | 58 | 800 | 845 |
| 454 | 57 | 850 | 835 |
| 482 | 57 | 900 | 830 |
| 510 | 53 | 950 | 775 |
| 537 | 48 | 1000 | 700 |

1. Do not exceed seating and packing material ratings.

### Table 14. Pressure-Temperature Ratings for N10276 Nickel Alloy Valve Body (Optional)

| Temperature (°C)[1] | Working Pressure (barg) | Temperature (°F)[1] | Working Pressure (psig) |
|---|---|---|---|
| -195 to 37 | 103 | -320 to 100 | 1500 |
| 93 | 103 | 200 | 1500 |
| 149 | 100 | 300 | 1455 |
| 204 | 97 | 400 | 1410 |
| 232 | 94 | 450 | 1370 |
| 260 | 91 | 500 | 1330 |
| 288 | 87 | 550 | 1270 |
| 315 | 83 | 600 | 1210 |
| 343 | 81 | 650 | 1175 |
| 371 | 78 | 700 | 1135 |
| 398 | 73 | 750 | 1065 |
| 426 | 69 | 800 | 1015 |
| 454 | 67 | 850 | 975 |
| 482 | 62 | 900 | 900 |
| 510 | 53 | 950 | 775 |
| 537 | 49 | 1000 | 725 |

1. Do not exceed seating and packing material ratings.

### Table 15. Pressure-Temperature Ratings for N04400 Nickel Alloy Valve Body (Optional)

| Temperature (°C)[1] | Working Pressure (barg) | Temperature (°F)[1] | Working Pressure (psig) |
|---|---|---|---|
| -195 to 37 | 82 | -320 to 100 | 1200 |
| 93 | 72 | 200 | 1055 |
| 149 | 68 | 300 | 990 |
| 204 | 65 | 400 | 955 |
| 232 | 65 | 450 | 952 |
| 260 | 65 | 500 | 950 |
| 288 | 65 | 550 | 950 |
| 315 | 65 | 600 | 950 |
| 343 | 65 | 650 | 950 |
| 371 | 65 | 700 | 950 |
| 398 | 64 | 750 | 935 |
| 426 | 63 | 800 | 915 |
| 454 | 46 | 850 | 680 |
| 482 | 34 | 900 | 495 |

1. Do not exceed seating and packing material ratings.

### Table 16. Pressure-Temperature Ratings for N08020 Nickel Alloy Valve Body (Optional)

| Temperature (°C)[1] | Working Pressure (barg) | Temperature (°F)[1] | Working Pressure (psig) |
|---|---|---|---|
| -195 to 37 | 82 | -320 to 100 | 1200 |
| 93 | 72 | 200 | 1045 |
| 149 | 67 | 300 | 980 |
| 204 | 67 | 400 | 980 |
| 232 | 67 | 450 | 980 |
| 260 | 67 | 500 | 980 |
| 288 | 67 | 550 | 980 |
| 315 | 67 | 600 | 980 |
| 343 | 67 | 650 | 980 |
| 371 | 67 | 700 | 980 |
| 398 | 67 | 750 | 980 |
| 426 | 67 | 800 | 980 |

1. Do not exceed seating and packing material ratings.

## Table 17. Allowable Pressure Drops (bar)

| PORT DIA. (mm) | PLUG TRAVEL (mm) | ACT TYPE | AIR-TO-OPEN ACTION | | | | | AIR-TO-CLOSE ACTION | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | BENCH RANGE (barg) | 0.2-1.0 barg SIGNAL TO ACTUATOR | | WITH POSITIONER 1.38 barg AIR SUPPLY | | BENCH RANGE (barg) | 0.2-1.0 barg SIGNAL TO ACTUATOR | | WITH POSITIONER 1.38 barg AIR SUPPLY | |
| | | | | Max CL IV Shutoff Pressure | Max CL VI Shutoff Pressure | Max CL IV Shutoff Pressure | Max CL VI Shutoff Pressure | | Max CL IV Shutoff Pressure | Max CL VI Shutoff Pressure | Max CL IV Shutoff Pressure | Max CL VI Shutoff Pressure |
| 6.4 | 12.7 | 32 | 0.3-1.0 | 61 | --- | 99 | --- | 0.2-0.9 | 61 | --- | 99(1) | --- |
| | | 32 | 0.5-1.0 | 99 | --- | 99(1) | --- | 0.2-0.7 | 99(1) | --- | 99(1,2) | --- |
| 7.9 | 12.7 | 32 | 0.3-1.0 | --- | 28 | --- | 71 | 0.2-0.9 | --- | 28 | --- | 99(1) |
| | | 32 | 0.5-1.0 | --- | 71 | --- | 99 | 0.2-0.7 | --- | 92 | --- | 99(1,2) |
| 9.5 | 12.7 | 32 | 0.3-1.0 | 31 | 19 | 62 | 50 | 0.2-0.9 | 31 | 19.1 | 99 | 97 |
| | | 32 | 0.5-1.0 | 62 | 50 | 93 | 81 | 0.2-0.7 | 77 | 65 | 99(1) | 99(1) |
| | | 54 | 0.6-1.0 | 99(1) | 99(1) | 99(1,2) | 99(1,2) | 0.2-0.7 | --- | --- | --- | --- |
| 20.6 | 12.7 | 32 | 0.3-1.0 | 7.7 | 1.3 | 15.5 | 9.1 | 0.2-0.9 | 7.7 | 1.3 | 27 | 20 |
| | | 32 | 0.5-1.0 | 15.5 | 9.1 | 23 | 16.8 | 0.2-0.7 | 19.5 | 12.9 | 38 | 32 |
| | | 54 | 0.5-1.0 | 23 | 17.0 | 35 | 28 | 0.2-0.7 | 29.5 | 23 | 59 | 52 |
| | | 54 | 0.8-1.0 | 47 | 40 | 59 | 52 | --- | --- | --- | --- | --- |
| | | 70 | 0.7-1.0 | 56 | 49 | 72 | 65 | --- | --- | --- | --- | --- |

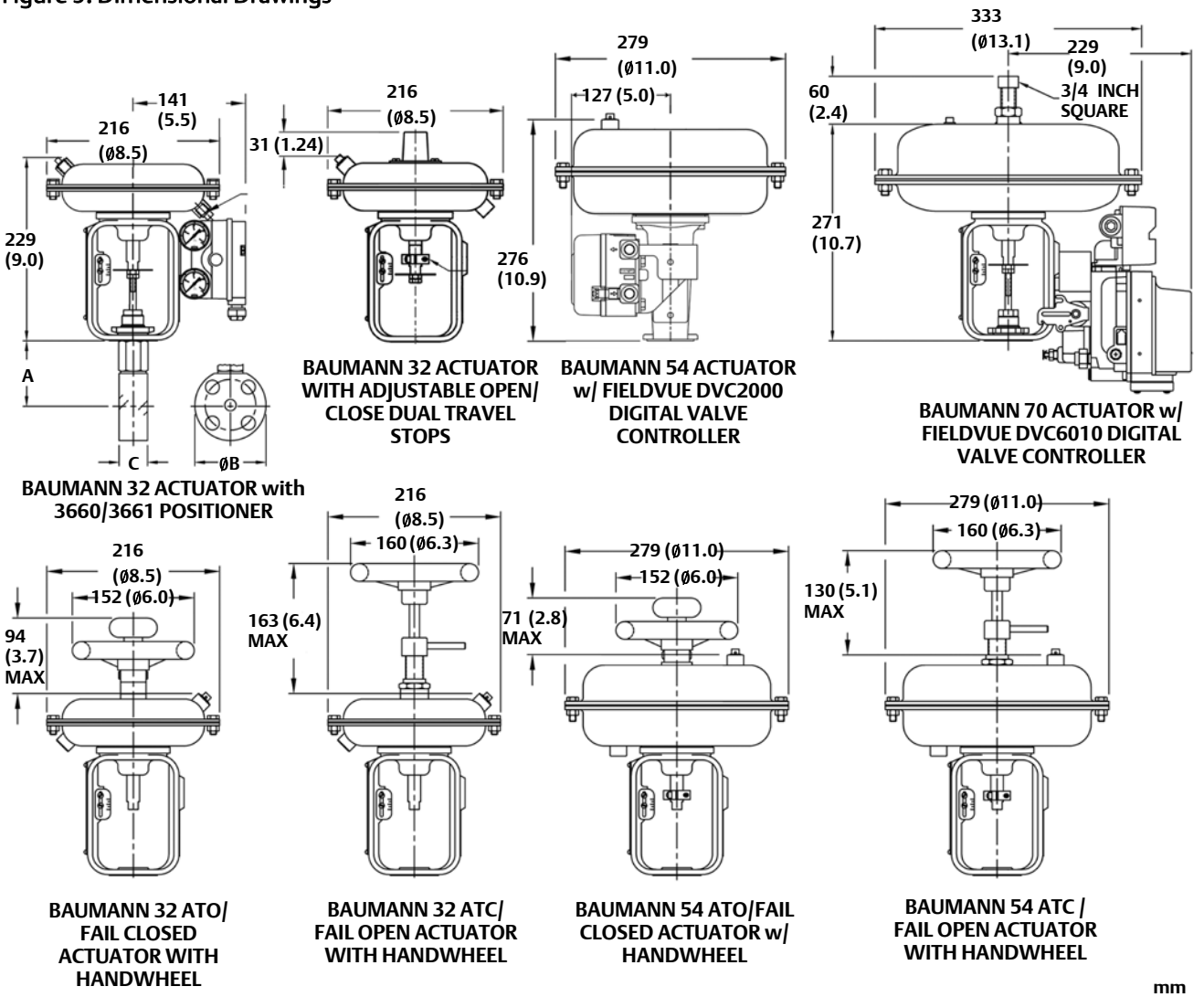
1. The maximum shutoff pressure when using ENVIRO-SEAL packing is defined by: $\Delta P$ = Table Value - [1112/(Port Diameter)$^2$]. These table values should not be modified by this formula and the maximum $\Delta P$ of 51 bar should be used for ENVIRO-SEAL packing.
2. The maximum shutoff pressure when using Flexible Graphite packing is defined by: $\Delta P$ = Table Value - [5337/(Port Diameter)$^2$]. These table values should not be modified by this formula and the maximum $\Delta P$ of 99 bar should be used for Flexible Graphite packing.

## Table 18. Allowable Pressure Drops (psi)

| PORT DIA. (in) | PLUG TRAVEL (in) | ACT TYPE | AIR-TO-OPEN ACTION | | | | | AIR-TO-CLOSE ACTION | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | BENCH RANGE (psig) | 3-15 psig SIGNAL TO ACTUATOR | | WITH POSITIONER 20 psig AIR SUPPLY | | BENCH RANGE (psig) | 3-15 psig SIGNAL TO ACTUATOR | | WITH POSITIONER 20 psig AIR SUPPLY | |
| | | | | Max CL IV Shutoff Pressure | Max CL VI Shutoff Pressure | Max CL IV Shutoff Pressure | Max CL VI Shutoff Pressure | | Max CL IV Shutoff Pressure | Max CL VI Shutoff Pressure | Max CL IV Shutoff Pressure | Max CL VI Shutoff Pressure |
| 0.25 | 0.50 | 32 | 5-15 | 887 | --- | 1440 | --- | 3-13 | 887 | --- | 1440(1) | --- |
| | | 32 | 7-15 | 1440 | --- | 1440(1) | --- | 3-10 | 1440(1) | --- | 1440(1,2) | --- |
| 0.3125 | 0.50 | 32 | 5-15 | --- | 418 | --- | 1033 | 3-13 | --- | 418 | --- | 1440(1) |
| | | 32 | 7-15 | --- | 1033 | --- | 1440 | 3-10 | --- | 1341 | --- | 1440(1,2) |
| 0.375 | 0.50 | 32 | 5-15 | 452 | 278 | 905 | 730 | 3-13 | 452 | 278 | 1440 | 1409 |
| | | 32 | 7-15 | 905 | 730 | 1357 | 1182 | 3-10 | 1131 | 956 | 1440(1) | 1440(1) |
| | | 54 | 9-15 | 1440(1) | 1440(1) | 1440(1,2) | 1440(1,2) | 3-10 | --- | --- | --- | --- |
| 0.8125 | 0.50 | 32 | 5-15 | 113 | 19 | 226 | 132 | 3-13 | 113 | 19 | 396 | 301 |
| | | 32 | 7-15 | 226 | 132 | 339 | 245 | 3-10 | 283 | 188 | 565 | 471 |
| | | 54 | 7-15 | 343 | 248 | 514 | 419 | 3-10 | 428 | 334 | 856 | 762 |
| | | 54 | 11-15 | 685 | 591 | 856 | 762 | --- | --- | --- | --- | --- |
| | | 70 | 10-15 | 815 | 720 | 1048 | 953 | --- | --- | --- | --- | --- |

1. The maximum shutoff pressure when using ENVIRO-SEAL packing is defined by: $\Delta P$ = Table Value - [25/(Port Diameter)$^2$]. These table values should not be modified by this formula and the maximum $\Delta P$ of 750 psi should be used for ENVIRO-SEAL packing.
2. The maximum shutoff pressure when using Flexible Graphite packing is defined by: $\Delta P$ = Table Value - [120/(Port Diameter)$^2$]. These table values should not be modified by this formula and the maximum $\Delta P$ of 1440 psi should be used for Flexible Graphite packing.

## Figure 9. Dimensional Drawings




Note: Actuator removal requires 115 mm (4.5 inches) vertical clearance.

## Table 19. Valve Dimensions

| VALVE SIZE | | A BONNET | | | | B DIAMETER | | C | |
|---|---|---|---|---|---|---|---|---|---|
| | | Standard | | Extension | | | | | |
| DN | NPS | mm | Inch | mm | Inch | mm | Inch | mm | Inch |
| 15 | 1/2 | 83.8 | 3.3 | 218.4 | 8.6 | 88.9 | 3.5 | 38.1 | 1.5 |
| 20 | 3/4 | 83.8 | 3.3 | 218.4 | 8.6 | 107.95 | 4.25 | 38.1 | 1.5 |
| 25 | 1 | 78.7 | 3.1 | 215.9 | 8.5 | 114.3 | 4.5 | 50.8 | 2.0 |

## Table 20. Valve Assembly Weights

| VALVE SIZE | | WEIGHT | |
|---|---|---|---|
| DN | NPS | kg | lb |
| 15 | 1/2 | 1.7 | 3.8 |
| 20 | 3/4 | 2.4 | 5.3 |
| 25 | 1 | 3.3 | 7.3 |

## Table 21. Actuator Weights

| ACTUATOR TYPE | WEIGHTS | |
|---|---|---|
| | kg | lb |
| 32 | 4.5 | 10 |
| 54 | 11.3 | 25 |
| 70 | 15.4 | 34 |
| MV | 10 | 22 |
| VA | 14 | 30 |

## Table 22. Model Numbering System

| | 24 | | | | F | | |
|---|---|---|---|---|---|---|---|
| Actuator | Valve Body Series | Plug Series | Characteristic | Seat Leakage | Wafer Valve Body | Bonnet Style | |
| 32(1) | | 102 | Linear / Metal Seat | IV | | --- | Standard |
| 54 | | 151 | Modified Equal % / PTFE Seat | VI | | E | Extension |
| 70 | | 177 | Modified Equal % / Reinforced PTFE | VI | | | |
| mv | | 548 | Equal % / Metal Seat (S41600) | IV | | | |
| va | | 577 | Equal % / PTFE Seat | VI | | | |
| | | 588 | Equal % / Metal Seat (S31600) | IV | | | |
| | | 648 | Linear / Metal Seat | IV | | | |
| | | 677 | Linear / PTFE Seat | VI | | | |
| | | 688 | Linear / Metal Seat | IV | | | |

1. Baumann 32 actuator requires dual stops with 177 trim series.

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